Missouri Botanical Garden

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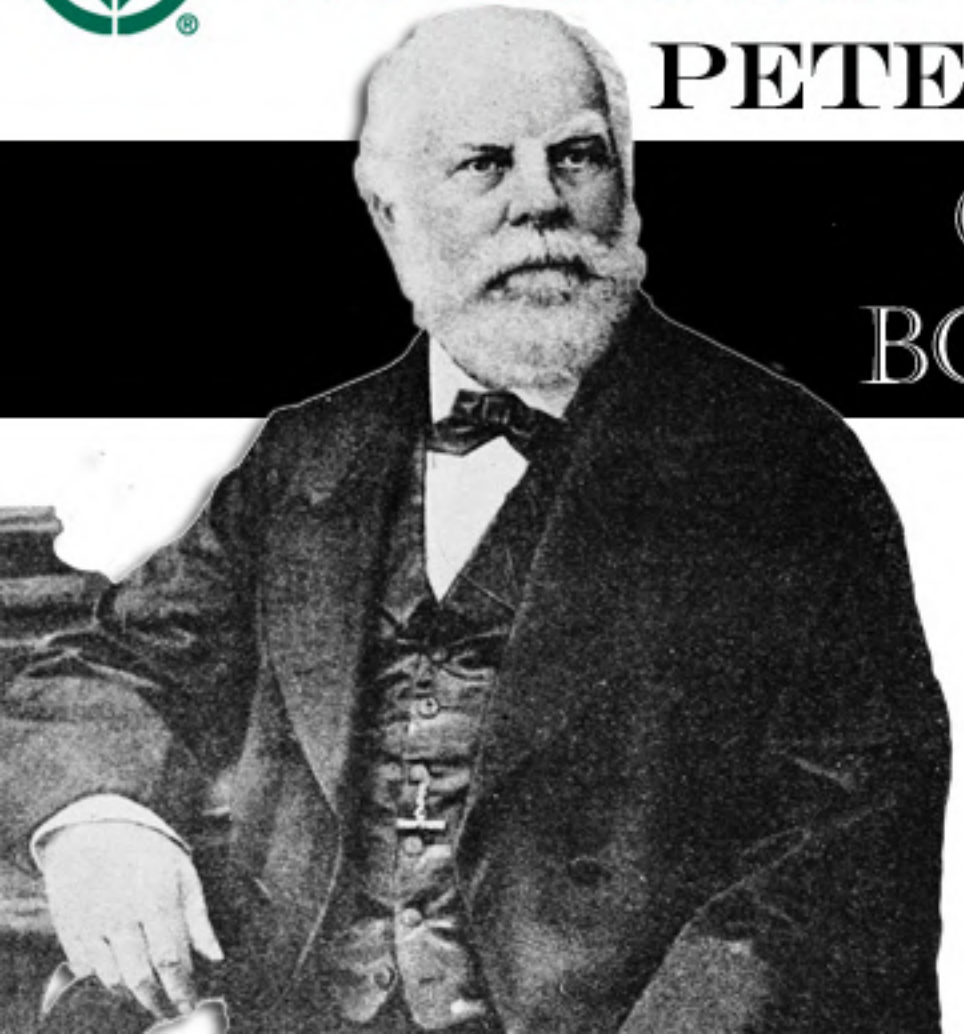
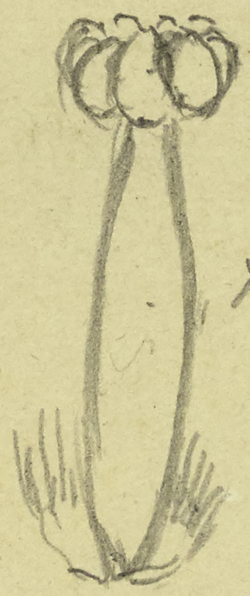


Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

Op. serpentina

June 15 75

San Diego



Brilly

8–10 petals 2–4 or almost 1/2 in long

staminodia in some only 1/4 in long

13 petals yellow

style cylindric, attenuated above x below

rays rounded, fleshy reddish

about 25 stamens on ovary

x2

8 inserted which stigmata

flowers clustered at end of branches

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cm
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MISSOURI BOTANICAL GARDEN

C. Schroeder,

PHARMACEUTIST,

No. 3005 Olive Street,

Near Garrison Avenue, **ST. LOUIS, MO.**

No. *Date,* *187*

℞

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2721

cm 0 1 2 3 4 5 6 7 8 9 10
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Sill Journ. 14. p. 338 (Nov 1852) Dec 1872

Opuntia serpentina Engelm San Diego L. Agassiz.
in the Mexican Expedition. 1872

Cat Bound p. 56

Cylindropuntia articulis cylindricis, tuberculis ovatis convexis pisum-tuberculis minoribus, areolis inde valde approximatis, supra setarum albidarum pectinatim gerentibus, ~~setam~~ aculeis 10-12 extendentibus rubentibus ad 1½ poll longis ~~acicularibus~~ vaginatis omnibus acicularibus plerisque deflexis

Joints in the small dead specimen before me not more than 3 inches long & 8 lines in diameter. oldest part round with large gray woolly areolæ beset with very numerous bristles, spines apparently lost.

Well distinguished from *O. prolifera* by the slenderer joints, convex, not immersed areolæ, slenderer and more numerous spines, whitish bristles much smaller and more crowded & tuberculey.

In Cat Bound the spines are said to be 3-9 inches instead of
1 to 2 Cm

2722

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July 5 1875

Opuntia serpentina

San Diego June 1875

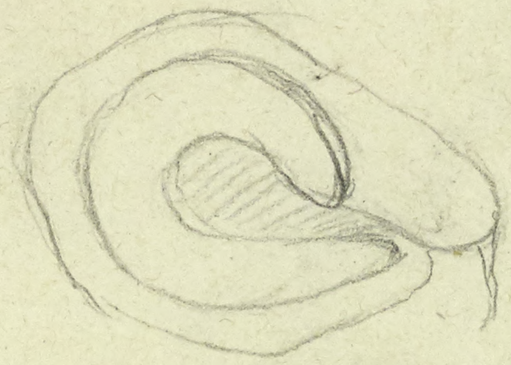
remnant of funicles

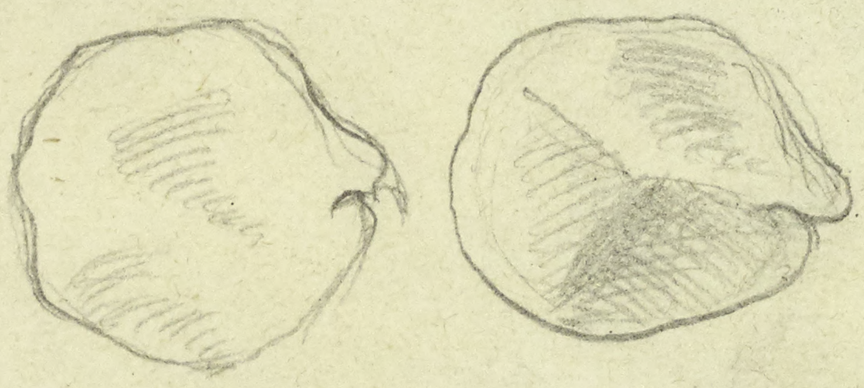
fruit ripened in the fresh joints sent.

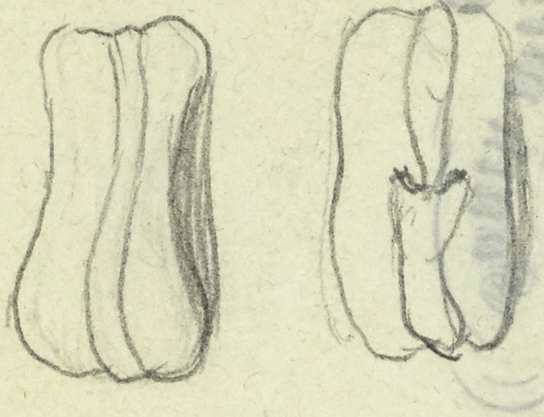
Dry and spiny like fruit of Op. Ficus-indica umbilicus very deep

cotyledons parallel or slightly obliquer

20 seeds







seeds x4

Cotyledons narrow, scarcely prominent

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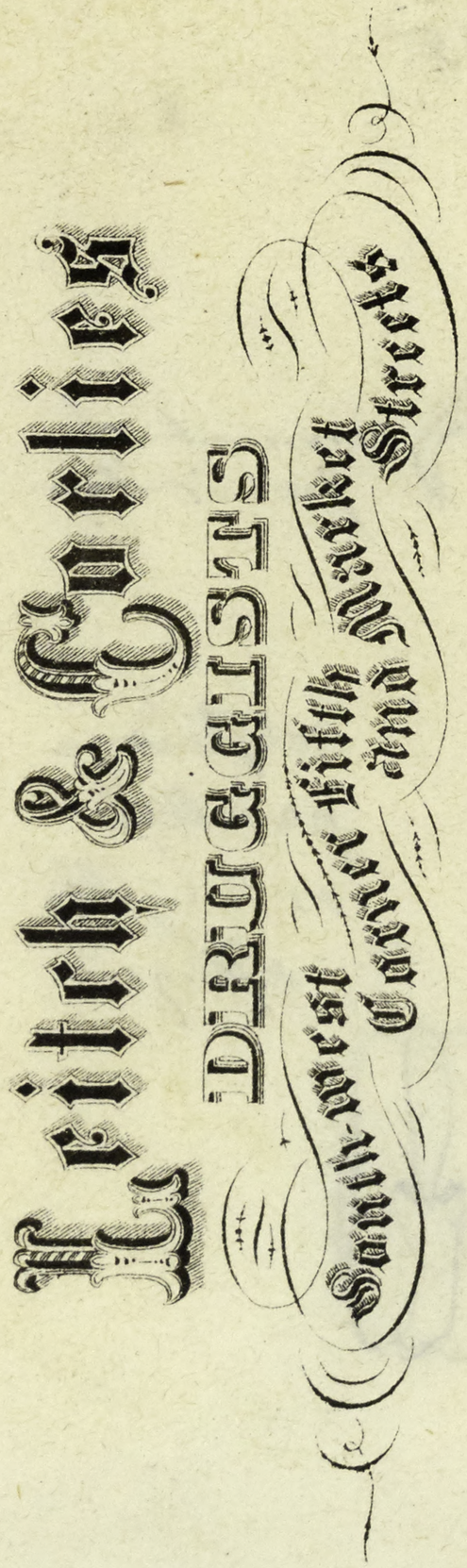

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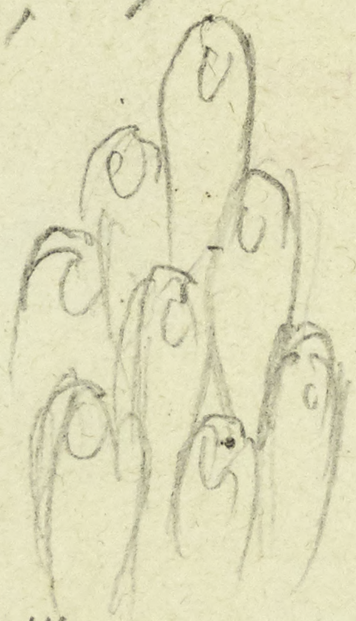
Op. serpentine

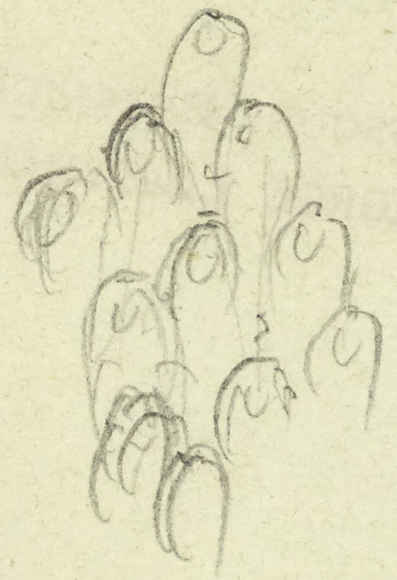
5 July 1875

San Diego Jan 1875

roots 9–10 lines diameter

stem, before me, not more than 6 inches long





one specimen

lvs 10–12 l/ms 5–15

l. long, sheathing

radiating, crisped

over prostrate

5/l. 2–5" l. 8/13

9/14 sp. 1–3 l. long

generally long

pale straw colored

bristles at top

and base of areola

12–14 l/ms nearly deflexed

9–10 short l/ms sheath very early lost

Tubercles 4–6 lines long or 7 very prominent.

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Leitch & Orlick
DRUGGISTS
Corner Fifth and Market Streets
Santa Fe, New Mexico

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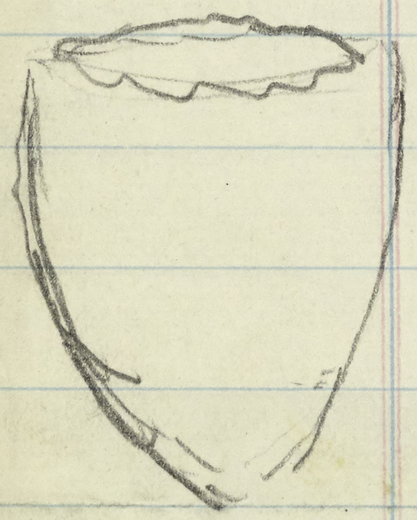
Cactaceae of the
Californian
Peninsula
Wm M Gabb 1867



No 21 Opuntia (Cylindropuntia) (Chorea) No 4 of Sketch

This species you are doubtless familiar with, since it extends from Cape San Lucas to San Buenaventura, Upper Cal. A thicket of it exists at "Las Chareas" 6 miles South of San Diego Grows sometimes 7 feet high & very arborescent. I send a segment, a little shrivelled but not yet having lost its vitality (Nov. 1867) although it was collected in January. The flower is greenish yellow, as are all of this group — I send an isolated group of spines from the woody stem.

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possess in regard to the 29 species of this family found by me in Iowa Col. The season of the year prevented me from getting the flowers or fruit of most of the species, & I began collecting without the slightest idea of the subject. Nobody can regret more than I that I had not the information at the outset which I have subsequently acquired by experience in this department. I trust however that you will do what you can with this material & after having worked it up as well as circumstances will permit, I beg you to retain the specimens for your own herbarium, or make such other disposal of them as may please you best.

Truly Yours
J. M. Gall

Dr Geo Engelmann.

5715

Gabb No 21

not as the flowers must be greenish

Opuntia prolifera Engelm in Sill Journ & Sci Bound p. 56.

The figure, description and locality of Mr Gabb's plant agrees fully with the San Diego specimens described under the above name; but he says: "flower greenish yellow, as are all of this group" — while Dr Engelm & Schott not only describe the flower as deep red, but also send specimens. The probability is that Mr Gabb got flowers of O. echinocarpa or serpentina, which are greenish yellow — mistaking them for this plant, of which he as well as the above named botanists say that it is an arborescent shrub which forms dense thickets near San Diego and New Jacob's Dr that it is common from Cape San Lucas at the south extremity of the Peninsula to San Buenaventura in the State of California sometimes 7 feet high, quite arborescent

The specimen before me consists of a single branch of 6 short (5-10 cm) stout sheathed spines "from the ~~dilapidated~~ trunk" the older part of the trunk has a "rough and gnarled" bark.

over

2726

~~Arborescent, sometimes 6 feet high~~

The name Chorea, as Mr Gibb writes it, or Choya as others spell it, seems to be the common local name for these short and fragile jointed cylindric Opuntias in Arizona and Northwestern Mexico

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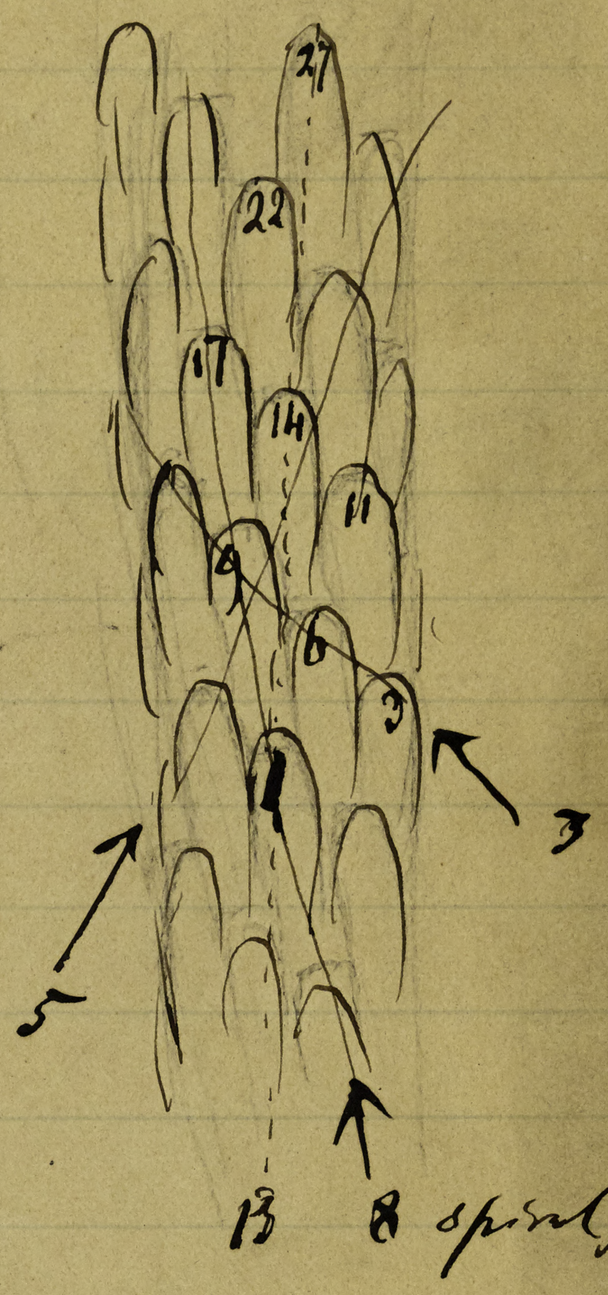
Opuntia polyjera Eng. Jan 22 1875

San Diego Calif

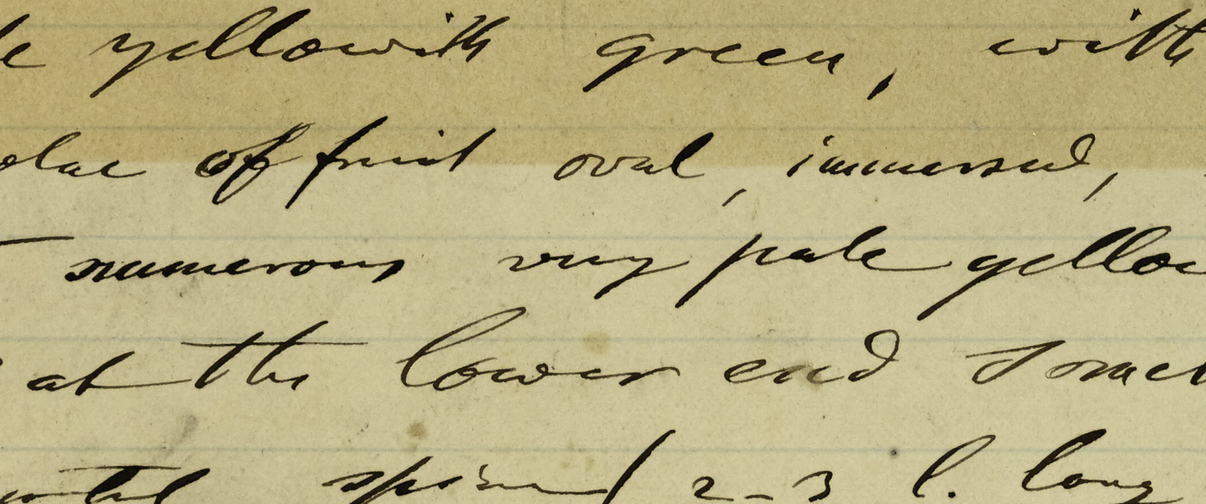
G. Mallahrodt Esq.
Dec 1874



Letter

fruit and stem 13/21 arrangement, 13 spirals already nearly perpendicular, fruit with 30-35 areolae pale yellowish green, with thick seeds areolae of fruit oval, immersed, bearing on upper end numerous very pale yellow very fine bristles and at the lower end sometimes a short horizontal spine (2-3 l. long) — Fruit soft and fleshy, not juicy, tuberculate

x 4



seeds rather regular with broad somewhat elevated commissure

Cotyledons all (I examined) parallel, only the 18th oblique

The thick blunt end of the raphe rim or (commissure) corresponds with the caudicle (radicle), the tapering end, which in the fresh seed yet shows the attached funiculus, corresponds with the cotyledons. — Several times reexamined and always found the same; radicle always corresponds with the thick end of the rim or commissure

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2727

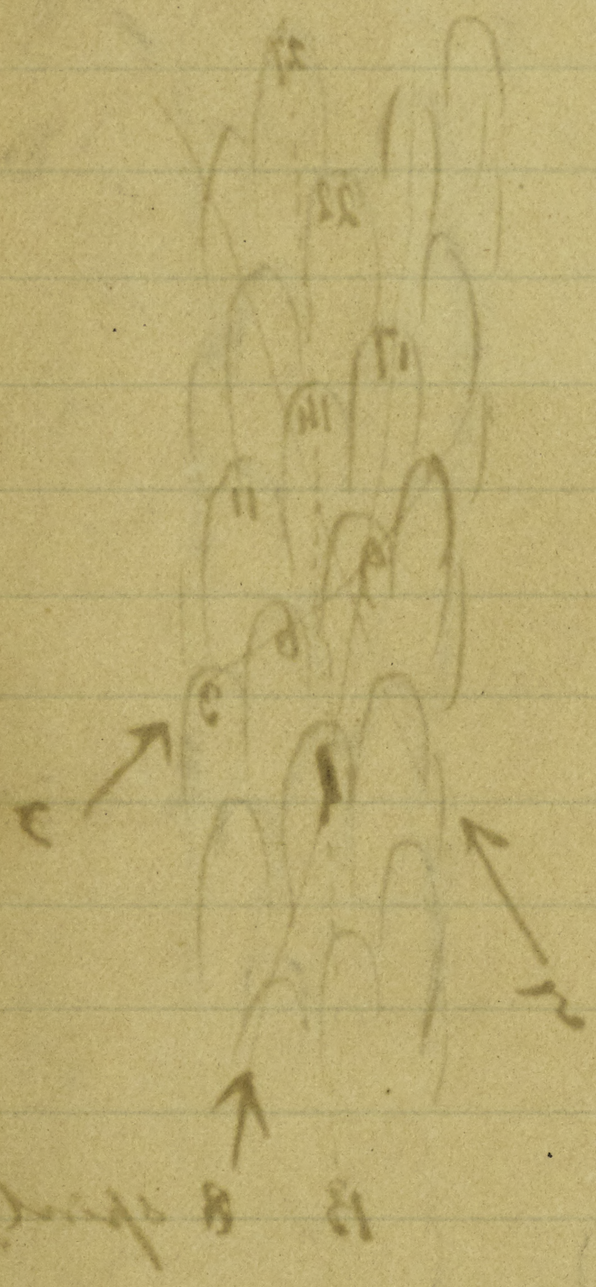
Oct 1875 fresh specs of Santa Diego

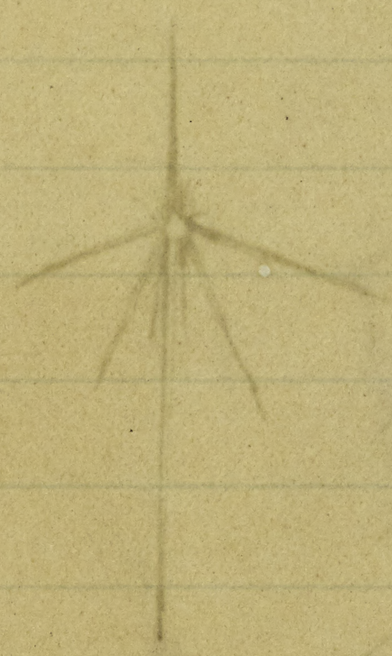
fruits subglobose 10–14 lines long green, pulpy

tubercles 30–50

= 8/13 – 11/15 order (9 – 7 – 11 – 14)

Umbelliferae Dup





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O prolifera 1245-50.

their mouths, will simplify all the problems involved in the endeavor to deepen the channels through them.

A remarkable fact has been observed by savants, that the alteration of river courses in consequence of the rotation of the earth, an influence which would lead us to expect the continual erosion of the western bank of the Mississippi, is neutralized here on account of a gradual upheaval of the western chains of our continent, and the Mississippi system and likewise the Texas system of rivers—in short, all the rivers that flow into the Gulf of Mexico uniformly tend toward the southeast. This tendency is promoted by the gradual subsidence going on in the Appalachian chain of mountains. Whether these views are well-founded or not, they serve to call attention to the importance of noting the modification of local laws of alluvial deposit by vastly extended surface upheavals and depressions. The local action of the waves of the sea, of the oceanic currents, of the tides, of the river freshets, must be studied, and, in addition to this, the behavior of the entire river system revealing the slow but inevitable influence of terrestrial rotation and vast upheavals or depressions.

When we look abroad upon Nature as presented to us by Science we realize more and more fully the words of Humboldt in which he describes it as a "whole moved and animated by internal forces," a vast process in which even the "everlasting hills" seem to move and to perceptibly crumble away under the disintegrating influence of the air and water. The gradual contraction of the earth's crust effects a local upheaval or wrinkle, while the perpetual process of the atmosphere undermines and levels all.

Foremost upon our attention to-day, the means and appliances adopted in the interest of the science of Meteorology force themselves. The establishment of the United States Signal Service and the daily collection and publication of the results of the scattered observations is one of the greatest events in the scientific world of to-day. Consider only how it has cleared up the theory of storms. The valuable researches of Redfield, Espy, Henry, Loomis, and Dové, are complemented and reduced to harmony by the generalizations of the Signal Service.

Cyclones are formed by the meeting of contrary winds. The grand "battle-ground" on which our cyclones arise—and all storms are proven to be cyclonic—is the circle of trade-wind influence, and this in summer is between the 10th and 12th parallels of North latitude. The tendency of the southeast trade-winds to invade the territory of the northeast trade-winds by sweeping over the equator into our hemisphere is the origin of cyclones, according to Maury. All collisions of contrary winds tend to produce a vortical whirl by reason of the influence of the revolution of the earth. A wind blowing southward is deflected to the west, and one blowing northward is deflected to the east. Hence the movement of cyclones in the Northern hemisphere is found to be opposite to the movement of the hands of a clock, while in the Southern hemisphere the movement is the same with the hands of a clock. Any vortical movement in the atmosphere, no matter how slight, produces an ascending current of air, and this relieves

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the pressure of the atmosphere from the barometer. Hence the law of storms says the winds blow from all sides towards a point where the barometer is low.

Again, the upward current of air in the centre of a vortical whirl carries up the warm moisture-laden atmosphere, which immediately becomes condensed, and a fall of rain or hail occurs. But, again, the condensation of vapor into rain-drops is accompanied by the evolution of heat, and this heightens the momentum of the ascending current. Hence the tendency of a small vortical movement in the atmosphere is to expand into a general cyclone. The ultimate result of the cyclone or storm is to restore an equilibrium between the upper and lower strata of the atmosphere in regard to temperature and moisture; the storm proceeds until the upper stratum has become warmer and more moist, while the lower stratum has become cooler and less charged with moisture. The vast movements of the air between the equator and poles to restore the equilibrium act continually to produce a tension between the upper and lower strata of air, and thus give occasion to the ever-recurring cyclones. Another remarkable feature in the theory of storms takes note of the fact that while there is more water in the Southern hemisphere than in the Northern, yet there is less atmosphere. The cause of this has been shown, mathematically, to be found in the fact that in the Northern hemisphere, where there is more land and more numerous and lofty mountain chains, the resistance to the deflecting tendency which arises from the earth's rotation is greater than in the Southern hemisphere. The consequence of the more rapid and regular movement of the winds in the Southern hemisphere is a greater depression there. The trade-winds blow from the Southern hemisphere with greater velocity and momentum, and overcome the northern trade-winds, forcing them several degrees north of the equator, permanently.

The subject of Meteorology, considered in its more general aspect, is one that influences many important phases of human interest. In some remote future, when the air-currents are thoroughly understood, aërial navigation may become entirely practicable. Even now, when so few of the conditions are known that the weather can be foretold for scarcely one week in advance, our commercial marine is greatly benefited. When it becomes possible to forecast the season for one or three months ahead, the farmer will be provided with the means to avoid the uncertainty attendant on his vocation. "Scientific agriculture" may then exist as a fact as well as in name.

Next among the important items which the scientific interest of the new year brings to mind is the approaching transit of Venus. On the 8th of next December occurs the first transit of Venus that has occurred since the improvement of the telescope. It is one hundred and five years since the last one took place. Extensive preparations are making in this country and in Europe for the most accurate mathematical verification of the several elements of the phenomenon. The moment of contact with the limb of the sun, if fixed accurately from different points of observation, will settle the

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Op. proc. for

Dec 28 1875

section through
seed, showing
the furinders
or rather raphe

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GARDEN
GEORGE ENGELMANN PAPERS

J.C. Kirkbride
APOTHECARY ST. LOUIS, MO.
2348 AND 3500 Olive St.

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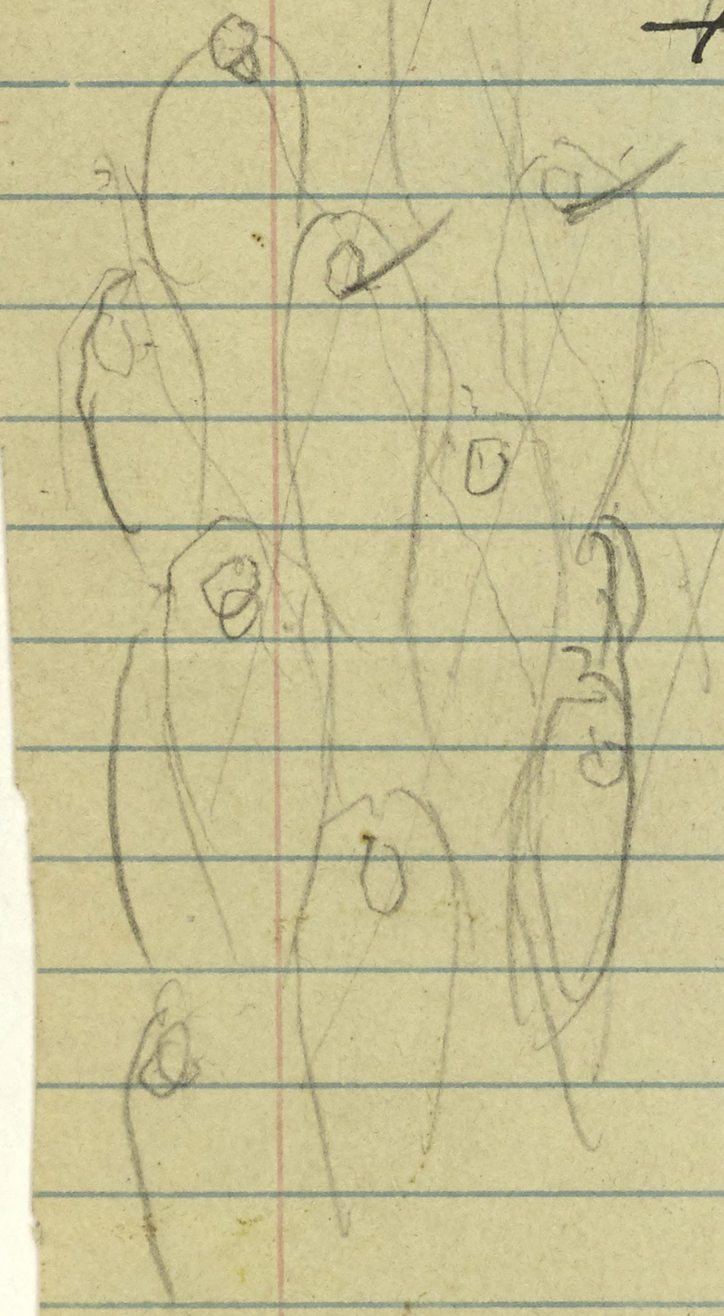
Opuntia polyacra, from La Veja,
Cerro Alerdon 3‴ long cult by Parish
Joint 6–10" long 1–1½" wide
areole ½–¾ inch apart at end of tubercle
Spines very numerous, with brownish sheaths
Tubercles ½ inch long.

San Bernardino
Nov 12 1880



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Opuntia polifera

San Diego Nov 2d 1880

flower purple, with a slight Brownish Tinge 1½ inches wide ovary globose, with 30–35 areolae in $\frac{13}{21}$ order, hemispheric quite prominent, bearing short (1½ lin long) subulate sepals and bristly and spine bearing areolae; spines brown, ½ inch long 6–8 lines 13 outer sepals retuse cuspidate, purple, similar to petals and gradually transient into them. Petals 8 spatulate, retuse or obtuse, cuspidate. 6 stigmas white, capitate-clustered.

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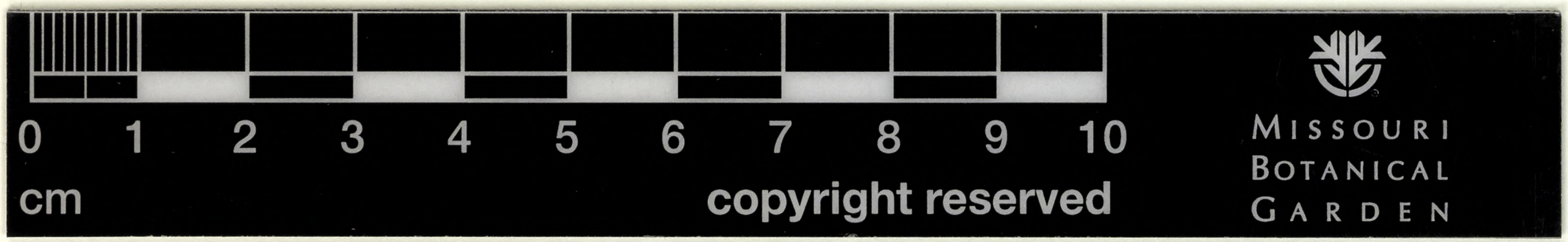


Dec 1872

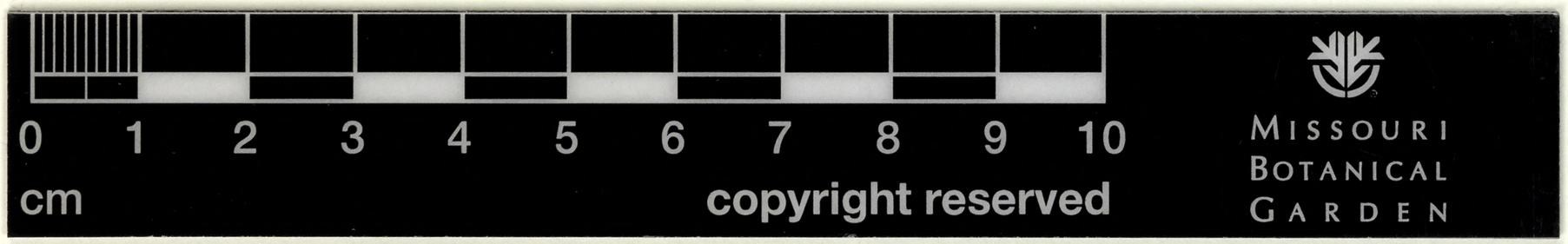
Hillm. Journ 14 p. 338 (Nov 1852)

Opuntia prolifera Engelm San Diego, L Agassiz in
Cact Bound p. 56 the Hassler Expedition 1872

Cylindropuntia, articulis ovatis, 2-pollicaribus tuberculis ovatis
prominulis, obliquis 8-seriatis (ex ordine 5/13)

Areolis ovatis immersis, supra setarum strumiferarum
penicillum, supra aculeos 6-9 circulares parvos
(pro 4) 3-5 lin longos, medio aculeo majore (8-12 lin)
recto 4 cruciatos, strameo-vaginatos; ceteris
majoribus robustioribus gerentibus.

Fructu obovato 2 pollicari longo lin 1 in diametro; Tuberculis
short 4-6 lin long, thereafter areolae approximate;



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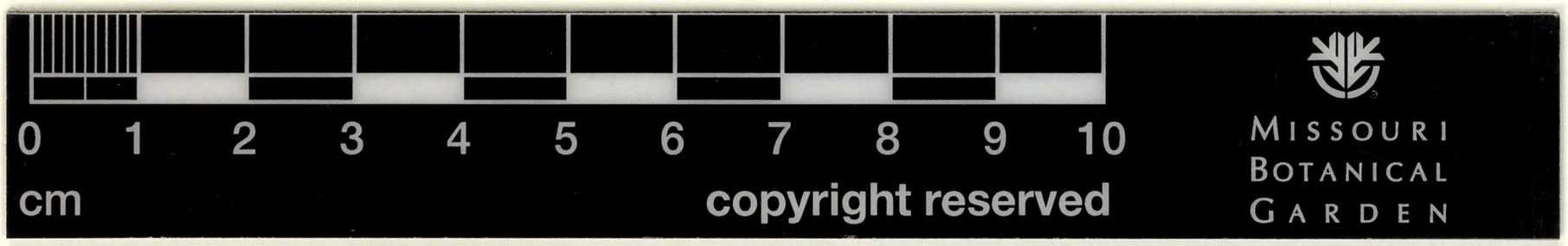

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They were fond of rustic arbors,—we have the form ; but galvanized wire works furnish a substitute, for wood, and also material for encirclings of the *basket flower beds* upon our lawns. Our numerous and improved species and varieties of climbers, and almost endless kinds of bedding plants or ornamental foliage make our fantasies far more pleasing than those of the can be made beautiful. Fountains with fish make admirable embellishments. Water birds make our larger ponds and lakes picturesquely beautiful. Decaying trees, with holes in their stems, are turned to account; ornamental plants set in the holes, often make unique oddities Large old logs of trees, lying in some unsuspected nooks, hollowed like longboats, then filled with

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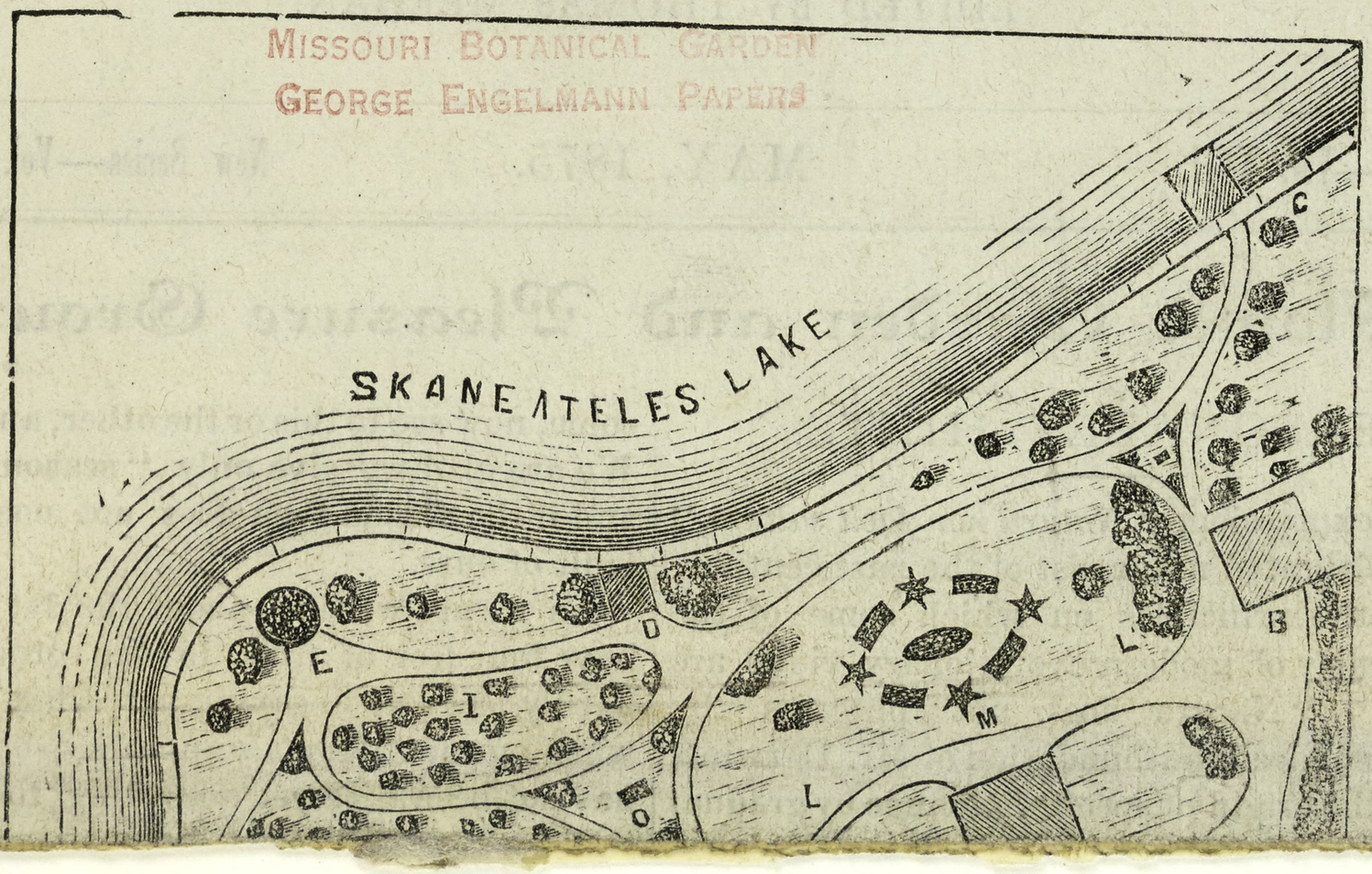

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The Gardener's Monthly,

DEVOTED TO

HORTICULTURE, ARBORICULTURE & RURAL AFFAIRS.

EDITED BY THOMAS MEEHAN.

Old Series—Vol. XVII. MAY, 1875. New Series—Vol. VIII. No. 5

Flower Garden and Pleasure Ground.

SEASONABLE HINTS.

In the expression, "*Natura non facit saltum*," Ray, a celebrated naturalist of the past century, asserted the principles on which some of the most popular of modern evolutionary views are founded. "Nature does not progress by

come, now see to this or the other, and so forth!" We are glad we give only "seasonable hints," and if the season then does not come, it is no fault of ours.

As we are writing, about the 1st of April, we have four feet of frost in the ground, and we hardly feel safe in saying yet, what can be done

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San Diego Nov 2 1880

Opuntia serpentina
ripe fruit
San Diego Nov 2 1880

Fruit with white bristly spines,
½ inch long; dry and brittle, fruit with 28 to
30 areolae; umbilicus deep, hemispherical.

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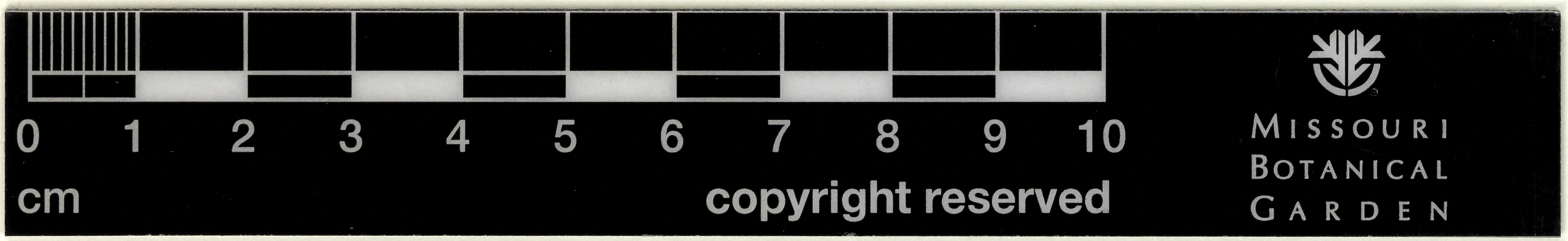
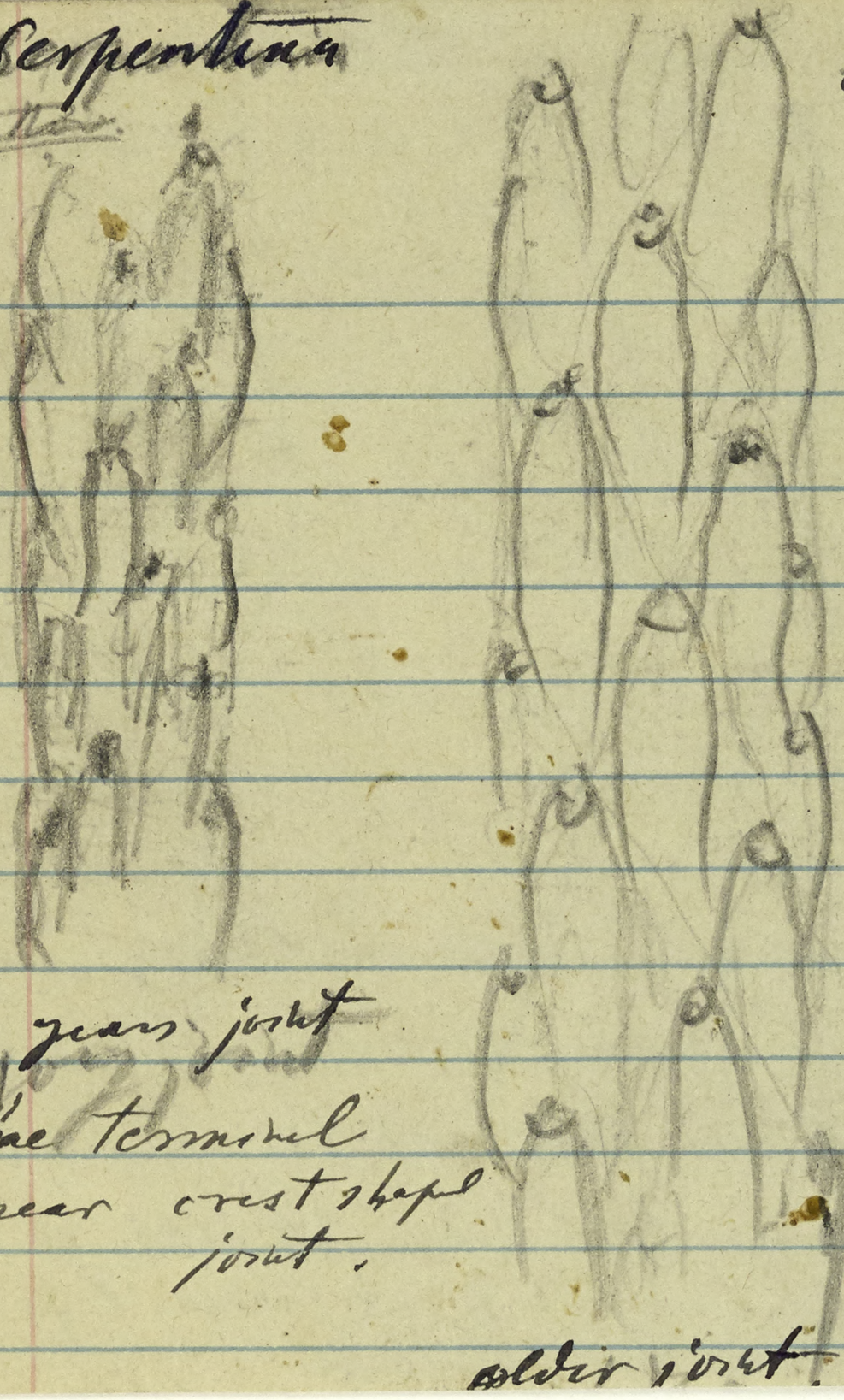


Op. Serpentina

San Diego
Nov 1880



this years joint
arcolate terminal
on linear crest shaped
joint.

older joint.

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2735 MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS

Mi Nov 10 at Banning gate Neff – Store, Parish
Bastard – Ch. Gorgonias 2–4 feet diam. 2–5–1
high, spreading bush dark reddish bark very
soon – wood becomes almost solid – fruits
clavate – ovoid, short, generally only 2–3 4
Co 3/4 = Diam above, seeds nearly 1/2
cavernous thick terminal long spines
with 9 white nerves, 1/2 inch thick Base Calyx
Corolla brownish Pl. yellow 2
fruit dry small, with at base 2 spines
Stem – branches distributed, spreading
outward

Do 11 at White water. Glorious Morning. Ehrlich
6'9" × 3'5" crown. Tabshaped. Cor Purple
red or yellow
Corolla white spine 68 or two 20–25–40
White water
at Station 27 ribs 68" high 18" diam with spines
spines very long – ovoid shape Cfascicles
fruit somewhat fleshy opening at base short

0 1 2 3 4 5 6 7 8 9 10 cm
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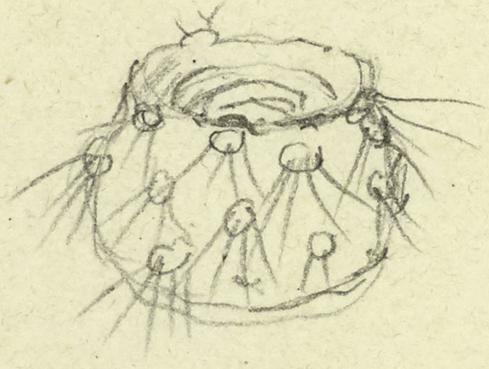
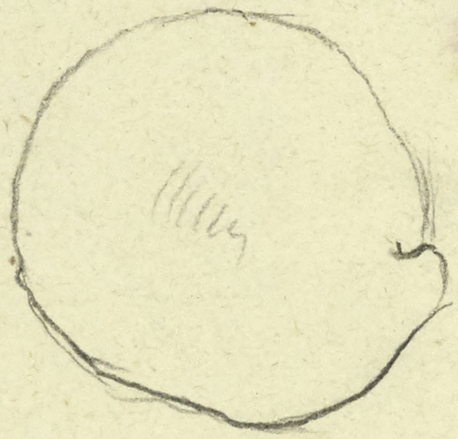
MISSOURI BOTANICAL GARDEN

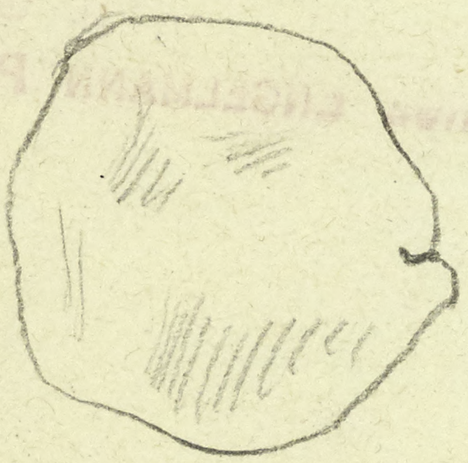
March 29 1881

Opuntia serpentina
S.E San Diego Nov 1st 1880



×4





seeds 3 lines dia—
with regular, with narrow commissure

Missouri Botanical Garden
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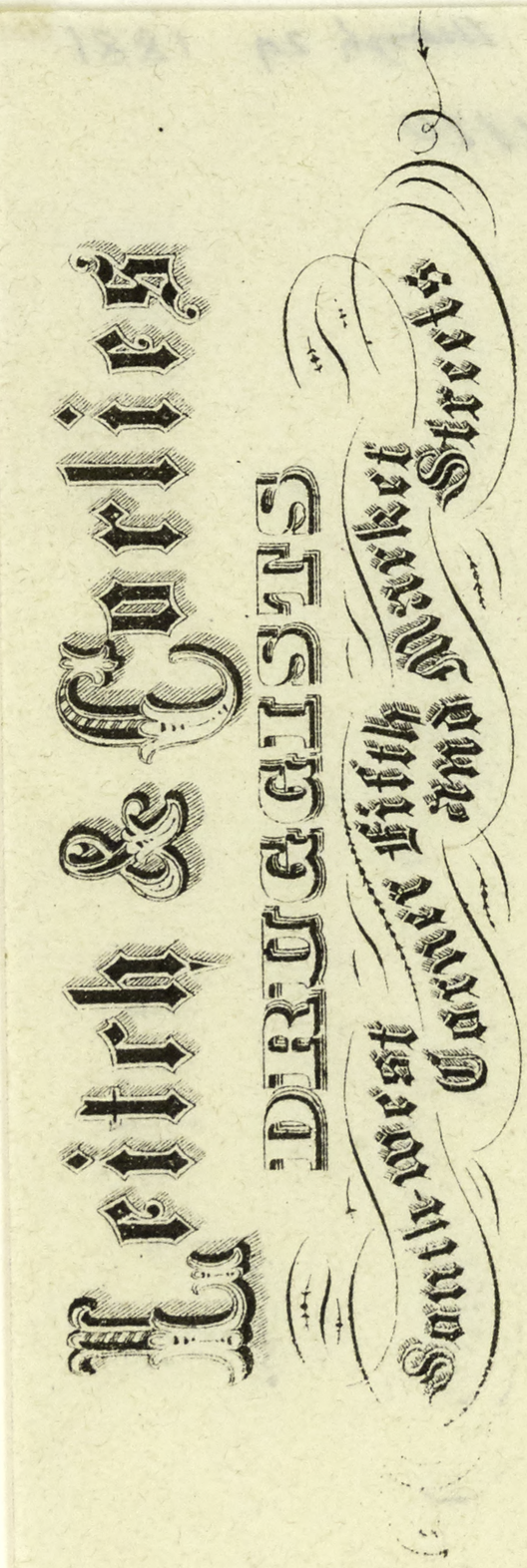
MISSOURI BOTANICAL GARDEN
ENGELMANN PAPERS



0 1 2 3 4 5 6 7 8 9 10
cm
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MISSOURI BOTANICAL GARDEN

Opuntia Leptocaulis
San Diego Nov 2 1880
Jan 22 1881

flowers apparently 1/2 inches diam
8 petals, spatulate yellowish

dry corolla from a similar spec

stigma two much decomposed
style thick

inside of stamens

nectarium cavity large

0 1 2 3 4 5 6 7 8 9 10
cm
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MISSOURI BOTANICAL GARDEN

Henry T. Rohlfing,

APOTHECARY,

No. 2600 Laclede Ave., S. W. Cor. Jefferson Ave.,

ST. LOUIS, MO.

No. ..... *Date,* *187*

℞

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

2737

Geo. Engelmann, M. D.,

No. 3003 Locust Street.

cm 0 1 2 3 4 5 6 7 8 9 10
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